People - Collins

Resident a bar code pioneer

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David Collins, third from right, was recently honored on the 50th anniversary of his invention of the bar code. His sons, Tim and Peter, are pictured here with Rhode Island politicians.

You use his technology every week at the grocery store, as the checkout clerk passes each item over the star-shaped scanner at his or her register. You've taken advantage of his invention every time you've accepted a package from UPS, when the brown shorts-clad delivery man beeps his handheld device at your package. But what you may not know is that the inventor of the bar code is a Duxbury resident, and the application was originally developed for something you may not use everyday – freight trains.

David Collins graduated from the Massachusetts Institute of Technology in 1959. He took a job working for Sylvania, working with a research group in Waltham.

"They were doing a lot of government research at the time," Collins said. "They had very few commercial applications to speak of."

The company wanted to have something unique, an application they could market and sell. Collins had done civil engineering work in undergrad, and had spent some time working for the Pennsylvania Railroad.

"I knew they and all railroads had a problem finding their rail cars," he said.

So he put together a team of engineers, and spent about a year working on the problem.

"Sylvania had a lot of experience in pattern recognition," he said. That translates as the art of reflecting energy on something and reading the information that bounced back – in plain English, early scanners.

Originally, they tried to get the scanners to read the letters and numbers on the side of railroad cars directly. Sylvania had some experience through their military and government work with high-speed intelligence gathering, doing things like reading newspapers with computers. But when it came to trains?

"It didn't work very well, Collins admitted.

For example, the letter B and the number 3 look very similar. In the case of scanning a newspaper article, such a mistake would be acceptable, but on the rails, it might get the wrong car headed to the wrong city.

Eventually, a lightbulb went off. Collins had the idea to use something that couldn't be misinterpreted – contrasting colors, especially black and white.

"We could put a label on a car for a dollar ... get a reflection from the bars and interpret them much more easily," he said.

They put the first scanner on the B&M railroad in 1961.

Collins said that right away, he had an idea that he'd stumbled upon something big. The biggest challenge wasn't an engineering one, however – it was a corporate one.

"My hardest selling wasn't to the railroads, it was to the people in New York who held the purse strings," he said. "I just kept beating on the door ... We had to demonstrate that there really was an active market."

He wrote up a report outlining the future possibilities of the "bar code" technology. Although the point-of-sale usage people see in supermarkets checkout lines wouldn't come along for another 10 years or so, but for anything that was conveyer based, where there's a regular pattern of appearance, there was an immediate application.

"We laid out what the market size would be for packages and conveyors," Collins said.

Sylvania was successful in marketing the technology to railroads and mining companies. A big coup came in 1967, when all railroad companies in North American passed a rule requiring their cars to have

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bar codes. The technology was also being used on rapid transit systems in New York, San Francisco and Washington D.C. – but interestingly enough, not Boston.

In 1968, Collins split off from Sylvania to form his own company, Computer Identics, based in Westwood. It was then that he moved his family to Duxbury. There he did some railroad work, but mostly went into other areas where the bar code could be used. When he was working with the railroads, his team received a "constant stream" of letters about other possible uses of the code, he said.

"We wanted to go after all the little things that needed tracking," he said. "We decided to stay with distribution and production control markets."

The business has become a family one. His sons, Tim and Peter (a DHS graduate) run a company in Portsmouth Rhode Island called A2B Tracking Solutions. Collins splits his time between the Westwood and Portsmouth offices (he's chairman of A2B).

His sons' company is working with the Department of Defense, which Collins said "has decided that it really wants to know where all the stuff it owns is."

They're using bar codes to develop a catalog of all military materials of significant value.

Collins was recently honored as the bar code technology turned 50. Rhode Island's two U.S. senators and Governor Lincoln Chaffee attended.

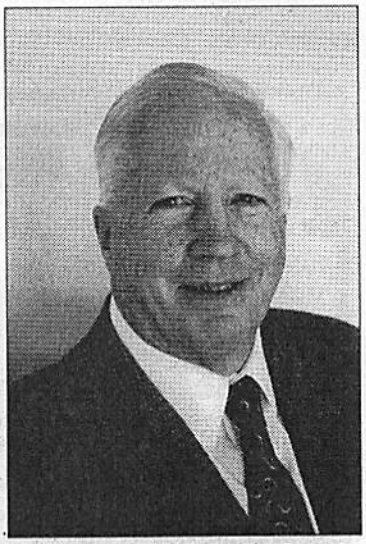
As for the technology's future, Collins noted that the bar code "is changing its appearance." He talked about QR code, the technology that's being used in mobile phones.

"For a couple dollars you can down load an application that decodes these codes," he said.

He's also running into other modern applications of the technology he created.

"What I do at Home Depot is ... go over into the self check out," he said. "I feel like my own laser operator over there."

A few weeks ago, on a trip, he got on a plane without ever using a paper ticket – he downloaded a boarding pass to his iPhone and used it to scan a bar code at the airport. He also



Collins says he has no plans to retire anytime soon.

helped develop bar coded bibs for the New York Roadrunners – a technology he tested out himself.

"I ran a couple marathons. I had to support my customers," he said.

He said he doesn't see retirement coming up any time soon. More than that, he's always on the lookout for new ways to use the technology he created 50 years ago.

"It's a nice feeling," he said. "You live in the present, you're always looking for new applications."